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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,871	12/26/2001	Marc Viala	34191	8073
116	7590	08/08/2005	EXAMINER	
PEARNE & GORDON LLP 1801 EAST 9TH STREET SUITE 1200 CLEVELAND, OH 44114-3108			STREGE, JOHN B	
			ART UNIT	PAPER NUMBER
			2625	

DATE MAILED: 08/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/019,871

Applicant(s)

VIALA ET AL.

Examiner

John B. Strege

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 25-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

***Response to Amendment***

1. The amendment received 5/25/05 has been entered in full. Claims 13-24 have been canceled and claims 25-35 are currently pending.

***Claim Objections***

2. Claim 28 is objected to because of the following informalities: In line 2 of claim 28 the word "in" following image should be changed to "is" so that the limitation reads "characterized in that said at least one image is converted..." Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 25-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madden et al. USPN 6,249,285 (hereinafter "Madden") in view of Toh USPN 5,537,494.

Madden discloses a method for developing an estimation of the structure of a three dimensional scene and camera path from multiple two-dimensional images of the scene (col. 3 lines 10-13). The technique involves displaying a visual representation of an estimated three-dimensional scene structure and the values of various parameters associated with the scene, together with a visual representation of at least one two-dimensional image used in the scene structure estimation algorithm (col. 3 lines 13-18). A user inputs information by adjusting parameters and specifying an element or region

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of the visual representation and supplies information such as attributes for the element or region to be applied during a next iteration of the scene structure estimation algorithm (col. 3 lines 18-23). Madden further discloses that the user may specify the location of planar surfaces (geometric contours) in a sequence of images which are of particular importance (col. 3 lines 58-61, locations inherently are defined by numerals). These structure parameters are related with geometric objects in the three dimensional environment (col. 3 lines 58-64 and the paragraph bridging cols. 5-6). The structure parameters are used in the scene structure estimation algorithm (col. 9 line 38 – col. 10 line 19). Madden does not explicitly disclose the detection of discontinuities in the appearance of the image, relating said discontinuities with geometric contours, and matching the geometric contours with the discontinuities by adjusting the parameters. Madden does however disclose adjusting the parameters to produce a more acceptable result of the structure estimation (col. 6 lines 41-53).

Toh discloses a method to produce three-dimensional information about a scene (at least the last sentence of the abstract). Toh recites an image processing system with an edge detector for detecting edges (discontinuities) in a supplied image and for creating an edge map therefrom. The edge map is used for defining boundaries or anchor points in the image and a polynomial function is fitted to the shading profile of the image (col. 4 lines 40-48, relating the discontinuities with geometric contours). This effectively reduces the amount of data defining the image (col. 3 lines 3-11). These edges that are detected correspond to discontinuities in the intensity profile of the image (col. 5 lines 12-15). Once the data has been reduced it can be used in a wide range of

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different image processing applications (col. 5 lines 31-33) such as for qualitative shape analysis (col. 6 lines 15-45) or quantitative shape analysis (col. 8 lines 8-45).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine Madden and Toh to develop the estimation of a structure by detecting discontinuities in the data, relating the discontinuities with geometric contours, and matching the geometric contours with the discontinuities by adjusting the parameters. The motivation for doing so is that it would reduce the amount of data defining the image and thus speed up the scene analysis performed by Madden. Madden discloses using mark up parameters to offer quantitative feedback to the user and adjusting the parameters, and Toh discloses an effective way to reduce the amount of data defining the image. Thus it would have been obvious to one of ordinary skill in the art to combine Madden and Toh to obtain the invention as specified in claim 25.

Regarding claim 26, Madden discloses identifying elements or regions in the image as being straight lines, planes, circles, and other geometric abstractions or pixel regions (paragraph bridging cols. 5-6).

Regarding claim 27, Madden states that the parameters may include positional and type information and lengths of the camera (col. 3 lines 46-57).

Regarding claims 28-29, Toh discloses representing an image by combined edge and shading data (col. 2 lines 58-60) and fitting a continuous equation to image intensity portion bounded by abrupt intensity changes (col. 3 lines 12-17, and col. 43 lines 49-62).

Regarding claims 30-31 Madden discloses estimating camera parameters to provide depth estimates in the representation (col. 6 lines 8-22).

Regarding claim 32, Madden discloses that the scene structure algorithm reexecutes until the user is satisfied with the resulting visual scene structure (col. 3 lines 23-25).

Regarding claims 33-35, Madden discloses that a plurality of images are taken and the representation is reexecuted until the user is satisfied (col. 3 lines 10-25).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B. Strege whose telephone number is (571) 272-

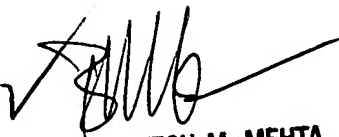
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7457. The examiner can normally be reached on Monday-Friday between the hours of 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JS



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